

Amendments to the Claims

Please amend claims 1, 9, 17, 22 and 29. Please cancel claims 2, 10, 13-16, 18, 23 , 30 and 33-36. Please add new claims 37 and 38. The currently pending claims as amended are listed below.

1 1. (Currently Amended) A method of data access code generation in an object-oriented
2 programming environment, comprising:

- 3 a) describing a data object in a data object description document, said data object
4 description document conforming to a data object document type definition, said data
5 object document type definition defining at least one application programming
6 interface (API) for providing access to backend data at runtime;
7 b) applying at least one code generation template to said data object description
8 document, said at least one code generation template including at least one data
9 access API call for at least one corresponding API for providing access to backend
10 data at runtime, said API defined by said data object document type definition;
11 c) generating code in an object-oriented programming language, said code embodying at
12 least one data access class to provide access to said backend data at runtime using
13 said at least one data access API call, said code being generated automatically as
14 output from said at least one code generation template applied to said data object
15 description document.

2. (Cancelled)

1 3. (Original) The method according to claim 1, wherein steps b) and c) are performed by a
2 data access code generator routine.

1 4. (Previously Presented) The method according to claim 1, wherein said at least one data
2 access class is a data access JAVA class.

1 5. (Previously Presented) The method according to claim 1, wherein said data object
2 description document is created in Extensible Markup Language (XML) language.

1 6. (Original) The method according to claim 1, wherein said at least one code generation
2 template is implemented in a transformation language.

1 7. (Original) The method according to claim 6, wherein said transformation language is
2 Extensible Stylesheet Language (XSL).

1 8. (Original) The method according to claim 3, wherein said data access code generator
2 takes said data object description document and said at least one code generation template as
3 inputs and outputs said at least one data access class.

- 1 9. (Currently Amended) A method of generating data access JAVA classes, comprising:
2 a) creating a XML data object description, said XML data object description conforming
3 to a data object document type definition defining at least one application
4 programming interface (API) for providing access to backend data at runtime;
5 b) applying a plurality of code generation templates to said XML data object description,
6 said plurality of code generation templates including at least one data access API call
7 for at least one corresponding API providing access to backend data at runtime, said
8 API defined by said data object document type definition;
9 c) generating code embodying at least one data access JAVA class to provide access to
10 said backend data at runtime using said at least one data access API call, said code
11 being generated automatically as output from said at least one code generation
12 template applied to said XML data object description.

10. (Cancelled)

- 1 11. (Original) The method according to claim 9, wherein steps b) and c) are performed by a
2 data access code generator routine.

- 1 12. (Previously Presented) The method according to claim 11, wherein said data access code
2 generator takes said XML data object description and said at least one code generation template as
3 inputs and outputs said at least one data access JAVA class.

13-16 (Cancelled)

1 17. (Currently Amended) An apparatus for generating data access code in an object-oriented
2 programming environment comprising:

- 3 a) a data object descriptor operative to describe a data object conforming to a data object
4 document type definition, said data object document type definition defining at least
5 one application programming interface (API) for providing access to backend data at
6 runtime;
- 7 b) at least one code generation template, said at least one code generation template
8 including at least one data access API call for at least one corresponding API for
9 providing access to backend data at runtime, said API defined by said data object
10 document type definition; and
- 11 c) a code generator operative to generate code in an object-oriented programming
12 language, said code embodying at least one data access class to provide access to said
13 backend data at runtime using said at least one data access API call, said code
14 generator automatically generating said code as output from said at least one code
15 generation template applied to said data object descriptor.

18. (Cancelled)

1 19. (Previously Presented) The apparatus according to claim 17, wherein said at least one
2 code generation template is operative to define the transformation of a data object description
3 comprising data object descriptors to said at least one data access class.

1 20. (Previously Presented) The apparatus according to claim 17, wherein said at least one data
2 access class is a data access JAVA class.

1 21. (Original) The apparatus according to claim 17, wherein said data object descriptor is
2 created in Extensible Markup Language (XML).

1 22. (Currently Amended) A program product for data access code generation in an object-
2 oriented programming environment, said program product comprising:

3 a) memory; and

4 b) a data access code generator stored on said memory, said data access code generator
5 being configured to perform the steps of,

- 6 i) receiving a data object description document describing a data object ~~in a data~~
7 ~~object description document~~, said data object description document
8 conforming to a data object document type definition, said data object
9 document type definition defining at least one application programming
10 interface (API) for providing access to backend data at runtime;
11 ii) applying at least one code generation template to said data object description
12 document, said at least one code generation template including at least one
13 data access API call for at least one corresponding API for providing access to
14 backend data at runtime, said API defined by said data object document type
15 definition;
16 iii) generating code in an object-oriented programming language, said code
17 embodying at least one data access class to provide access to said backend
18 data at runtime using said at least one data access API call, said code being
19 generated automatically as output from said at least one code generation
20 template applied to said data object description document.

23. (Cancelled)

1 24. (Previously Presented) The program product of claim 22, wherein said at least one data
2 access class is a data access JAVA class.

1 25. (Previously Presented) The program product of claim 22 , wherein said data object
2 description document is created in Extensible Markup Language (XML) language.

1 26. (Original) The program product of claim 22, wherein said at least one code generation
2 template is implemented in a transformation language.

1 27. (Original) The program product of claim 26, wherein said transformation language is
2 Extensible Stylesheet Language (XSL).

1 28. (Original) The program product of claim 24, wherein said data access code generator
2 takes said data object description document and said at least one code generation template as
3 inputs and outputs said at least one data access class.

- 1 29. (Currently Amended) A program product, said program product comprising:
2 a) memory; and
3 b) a program stored on said memory, said program being configured to perform the steps
4 of,
5 i) ~~creating~~ receiving a XML data object description, said XML data object
6 description conforming to a data object document type definition defining at
7 least one application programming interface (API) for providing access to
8 backend data at runtime;
9 ii) applying a plurality of code generation templates to said XML data object
10 description, said plurality of code generation templates including at least one
11 data access API call for at least one corresponding API providing access to
12 backend data at runtime, said API defined by said data object document type
13 definition; and
14 iii) generating code embodying at least one data access JAVA class to provide
15 access to said backend data at runtime using said at least one data access API
16 call, said code being generated automatically as output from said at least one
17 code generation template applied to said XML data object description.

30. (Cancelled)

1 31. (Original) The program product of claim 29, wherein steps ii) and iii) are performed by a
2 data access code generator routine.

1 32. (Previously Presented) The program product of claim 31, wherein said data access code
2 generator takes said XML data object description and said at least one code generation template as
3 inputs and outputs said at least one data access JAVA class.

33-36 (Cancelled)

- 1 37. (New) The method according to claim 1, further comprising the steps of:
- 2 d) modifying said data object description document; and
- 3 e) regenerating said code embodying said at least one data access class, said code being
- 4 regenerated automatically as output from said at least one code generation template
- 5 applied to said modified data object description document.
- 1 38. (New) The program product of claim 22, said data access code generator being configured
- 2 to further perform the steps of:
- 3 iv) receiving a modified data object description document; and
- 4 v) regenerating said code embodying said at least one data access class, said code
- 5 being regenerated automatically as output from said at least one code
- 6 generation template applied to said modified data object description
- 7 document.